

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau(43) International Publication Date  
16 September 2004 (16.09.2004)

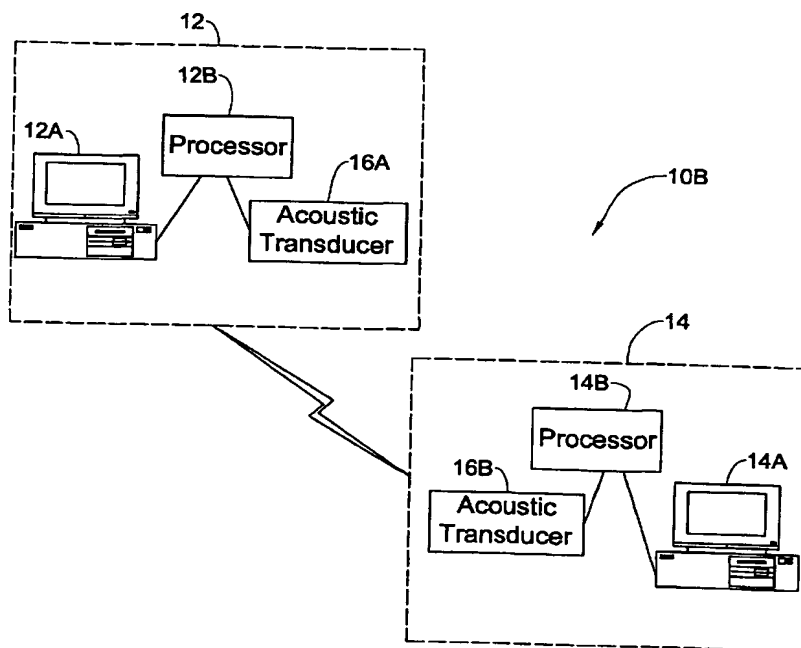
PCT

(10) International Publication Number  
**WO 2004/080111 A3**

- (51) International Patent Classification<sup>7</sup>: **H04B 7/00**,  
H04J 15/00, 4/00, 1/00
- (21) International Application Number:  
PCT/IL2004/000214
- (22) International Filing Date: 4 March 2004 (04.03.2004)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:  
154745 4 March 2003 (04.03.2003) IL
- (71) Applicant (for all designated States except US): **MEDIT - MEDICAL INTERACTIVE TECHNOLOGIES LTD.** [IL/IL]; 15 Atir Yeda Street, Kfar Saba 44643 (IL).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **GEHASIE, Eyal** [IL/IL]; 34/12 Nordau Street, Rishon Litzion 75263 (IL). **MENDELSON, Tomas** [IL/IL]; 15/5 Arlosorov Street, Kfar Saba 44453 (IL).
- (74) Agent: **REINHOLD COHN AND PARTNERS**; P.o. Box 4060, Tel Aviv 61040 (IL).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:  
— with international search report

[Continued on next page]

(54) Title: METHOD AND SYSTEM FOR ACOUSTIC COMMUNICATION



(57) Abstract: An acoustic transducer arrangement and system and method utilizing the same are presented. The acoustic transducer arrangement includes: an acoustic transmitter assembly including an array of transmitter elements operable to generate together a multi-frequency acoustic signal; and a control unit preprogrammed to operate the acoustic transmitter assembly in accordance with digital data stream indicative of a received signal to generate the multi-frequency acoustic signal indicative of the received signal.



— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

**(88) Date of publication of the international search report:**  
12 May 2005

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/IL04/00214

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : H04B 7/00; H04J 15/00, 4/00, 1/00

US CL : 370/310, 464, 478, 480, 481

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 370/310, 464, 478, 480, 481, 535, 536, 537, 542

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5,311,541 A (Sanderford, Jr.) 10 May 1994 (10.05.1994), column 4, lines 59-62.	1-3 and 25-28
A	US 6,310,429 B1 (Schyndel) 30 October 2001 (30.10.2001), column 11, lines 45-60.	1-3 and 25-28
A	US 6,442,105 B1 (Tubel et al) 27 August 2002 (27.08.2002), column 10, line 48 - column 11, line 31.	1-3 and 25-28
A	US 6,477,152 B1 (Hiatt) 5 November 2002 (05.11.2002), column 3, lines 16-23 and column 7, lines 63-67.	1-3 and 25-28
A	US 6,487,219 B1 (Snider) 26 November 2002 (26.11.2002), column 3, lines 43-47 and column 7, line 66 - column 8, line 7.	1-3 and 25-28
A,E	US 6,765,930 B1 (Oikawa) 20 July 2004 (20.07.2004), column 1, lines 62-65 and column 3, lines 41-49.	1-3 and 25-28

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

\* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T"

later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X"

document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y"

document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&"

document member of the same patent family

Date of the actual completion of the international search

11 March 2005 (11.03.2005)

Date of mailing of the international search report

06 APR 2005

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450

Facsimile No. (703) 305-3230

Authorized officer

Andrew Wahba

Telephone No. (571) 272-5081

*Rugenia Zogian*

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/IL04/00214

## Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☒ Claims Nos.: 4-24 and 29-43  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

☐

The additional search fees were accompanied by the applicant's protest.

☐

No protest accompanied the payment of additional search fees.